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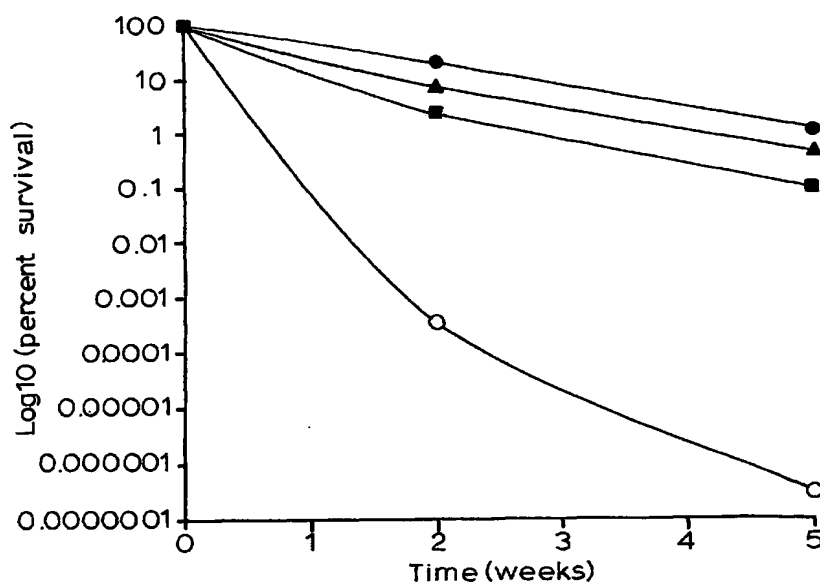
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[Continued on next page]

(54) Title: PROBIOTIC STORAGE AND DELIVERY



LEGEND

- - ("Non-encapsulated" freeze dried probiotic sample)
- - Encapsulated: protein - RS(MF)-oil emulsion
- ▲ - Encapsulated: protein-sugar MRP-oil emulsion
- - Encapsulated: protein - RS(MF)

encapsulating film.

(57) Abstract: Probiotic microorganisms are micro encapsulated by dispersing the probiotic microorganism in an aqueous suspension of a film forming protein and a carbohydrate; in an oil in water emulsion of a film forming protein and a carbohydrate and a fat; or in an oil which is subsequently dispersed in a film forming protein and a carbohydrate. The emulsion or suspension may be dried to form a powder. The probiotic may be dispersed in oil and then emulsified with the aqueous suspension and then dried to produce an encapsulated oil carrying probiotic. This may also be dried to produce a powder. Oil suspended probiotics may be preferred where the probiotic is water sensitive. The preferred protein is casein or whey protein and the carbohydrate may be a resistant starch or a saccharide with a reducing sugar group. Where the probiotic is oxygen sensitive the protein carbohydrate is heated to create Maillard reaction products in the



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